

## SHORT COMMUNICATIONS

### NAME OF SOUTHERN SUBSPECIES OF LITTLE CORELLA

Opinions differ whether there are recognizable subspecies of the Little Corella *Cacatua sanguinea*. (In passing, one regrets the present disuse of the original name 'Blood-stained Cockatoo', which is most descriptive.) But they are sometimes listed and there is therefore at least a taxonomic reason for checking their names. There are good reasons for correcting the name of the southern subspecies from *ashbyi* to *gymnopsis*.

The history of the southern subspecies began when Sclater (1871) was, as he said, 'compelled . . . somewhat unwillingly' to recognize a new species of cockatoo, to which he gave the name *Cacatua gymnopsis*. He noted that it was similar to *C. sanguinea* Gould, of northern Australia, type-locality Port Essington, but differed in that 'the usual naked space round the eye is largely extended into a bare open space below it'; the difference was illustrated by two figures. Sclater also observed that two specimens in the British Museum (Natural History) 'obtained by Sturt at Depot Creek [= Milparinka] evidently belonged to the present species'.

Sclater based his description on a live bird in the Gardens of the Zoological Society, London; if the bird was later preserved it has not been identified in museum collections. There is no record of its origin (except that it was purchased from a dealer named Jamrach) but Sclater recorded the habitat as South Australia and must have had good reason for doing so. In that period, about 1870, it is likely that a live bird came from the southern parts of Australia, perhaps Adelaide, at least much more likely than from the derelict Port Essington later designated by Mathews (1927). This was a mistake in every way; although Sclater gave locality 'South Australia', Mathews recorded 'no locality', and the bird was stated to be different from those from Port Essington and similar to others from Depot Creek. Clearly Mathews ought to have selected Milparinka. Mathews must have been aware of these facts, but by consigning *gymnopsis* to Port Essington he kept alive his own name *ashbyi* for the southern race.

The brief description of *ashbyi* is rather odd: 'smaller bill and wing, and the bare eye-ring much smaller'. This is the reverse of what might be expected; larger size would be consistent with what is found in southern populations of most, variable species; also larger bare area round the eye, as noted

by Sclater, was confirmed by Ramsay (1890) when he exhibited a specimen from the lower Darling which had 'the bare space round the eye comparatively as large as that of *gymnopsis*'. I have not examined the type.

Mathews originally gave the type-locality of *ashbyi* as New South Wales, but later (1927) restricted it to Yanco, New South Wales. Yanco is on the railway some 24 km north-west of Narrandera on the Murrumbidgee, but doubtfully at that time, and perhaps even now, within the range of the Little Corella. It is not clear why Condon (1968) did not accept this locality and stated that the type 'is believed to have come from Yanco station, interior of Queensland'. The only place with a similar name seems to be North Yanco HS in southern central Queensland at 28°12'S, 147°19'E, an unlikely situation and one also doubtful in the range of the species; Nielsen (1960) records the Little Corella rarely east of Cunnamulla.

The conclusion is that Mathews was mistaken in designating Port Essington as the type-locality of *gymnopsis*, thus relegating the name to the synonymy of *sanguinea*. Everything points to *gymnopsis* having been based on a bird from southern parts and therefore that name takes priority over *ashbyi*. Because there is no extant type of *gymnopsis* I select the Sturt specimens, referred to by Sclater, as neotypes with Milparinka as type-locality. Nomenclature of the southern subspecies should be:

*Cacatua sanguinea gymnopsis* Sclater.,  
*Cacatua gymnopsis* Sclater, 1871, Proc. zool. Soc. Lond., 1871: 493; South Australia (= Milparinka).  
*Cacatoes sanguinea ashbyi* Mathews, 1912, Austral avian Rec. 1: 36; New South Wales (= Yanco).

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 8 November 1973.

### THE AUXILIARY SOCIAL SYSTEM IN KOOKABURRAS: A REAPPRAISAL OF ITS ADAPTIVE SIGNIFICANCE

Parry (1970, 1973a, 1973b) demonstrated the existence of an unusual auxiliary social system in Kookaburras *Dacelo gigas*. Frequently adult birds do not breed immediately on reaching sexual maturity, but remain in their parents' territories where they assist in incubating eggs and feeding and caring for young from later clutches. Mature auxiliary birds retain their non-breeding status for one year or occasionally longer. This system is an example of the pattern of breeding termed by Lack (1968) 'cooperative breeding', and such a thorough and well-documented study as Parry's is specially to be commended. However, we believe that her interpretation of the auxiliary social system of Kookaburras is neither the simplest nor the most likely explanation of the observed phenomena. We doubt whether the social system can be regarded as 'a long-term adaptation for reducing fertility of the population' (Parry 1973b). Our reappraisal therefore consists first of a short discussion of the likelihood of such an adaptation by a population and secondly of an attempt to show that the auxiliary social system in Kookaburras can be explained without recourse to such long-term adaptations by populations.

Natural selection operates in favour of those individuals that produce the greatest number of reproducing offspring. Thus the total amount of time or energy devoted to reproductive effort by an individual during any period will be the maximum possible without unduly jeopardizing its own survival and hence future reproduction. In any breeding season the distribution of this effort between one or many offspring should be determined by the strategy that produces the maximum number of adult progeny (Williams 1966a). Some of the environmental factors influencing the evolution of different strategies have been discussed by Cody (1966) and Tinkle *et al.* (1970), among others.

How can behaviour that apparently results in individuals restricting their reproduction to less than the optimum (i.e. that resulting in the maximum contribution to future generations) evolve? If such behaviour does occur, then it must result from selection between groups of individuals in which the reproductive efforts of individuals are compromised by subordination to group interests. The explanation of the Kookaburra's auxiliary system as an adaptation for reducing the breeding potential of the population is an example of a group-related interpretation. However, these group-related adaptations must be attributed to inter-group selection, a process that has been strongly criticized (Maynard Smith 1964; Lack 1966; Williams 1966b) on two major points:

the necessary characteristics of the population, i.e. small isolated groups subject to a special regime of genic and group selection, are highly unlikely;

no model can explain why mutations resulting in an increase in the reproductive rate of individuals would not spread throughout the group.

It is not our intention to enter further into the objections to the concept of adaptations by populations, other than to repeat Williams's (1966b) admonition that 'the principle of parsimony demands that we recognize adaptation at the level necessitated by the facts and no higher'. Using this as a starting point, we consider that the auxiliary social system in Kookaburras can best be understood as the sum of adaptations of individuals.

The auxiliary system is beneficial to a breeding pair in two ways. First, it directly enhances their chances of survival by leaving them more time to devote to their own welfare; and secondly, it enables them nearly to double the number of offspring produced (Parry 1973b). The auxiliaries are likely to increase their chances of survival by remaining with their parents, rather than risking shortage of food, and attack in alien territories. During this period they may also gain experience in feeding and caring for young, and in territorial defence (Parry 1973b). Lack (1968) proposed that delayed reproduction is to be expected in birds that need a period of learning to rear young successfully. Although difficult to establish experimentally for Kookaburras, it is suggestive that only one fledgeling survived from two clutches sired by yearling males during Parry's study.

In addition to these benefits, there is a further selective advantage resulting from the close genetic relationship between the auxiliary birds and the siblings that they help to raise. Because the auxiliaries share half their genes with their siblings, they are as closely related to these individuals as they would be to their own progeny. In certain circumstances natural selection could favour behaviour that benefits one's siblings, a process known as *kin selection* (Hamilton 1964; Maynard Smith 1964). Maynard Smith and Ridpath (1972) interpreted the 'wife-sharing' system of Tasmanian Native-hens *Tribonyx mortierii* as an example of such kin selection. The close genetic relationships within breeding groups of Yellow-tailed Thornbills *Acanthiza chrysorrhoa* (Ford 1963), Superb Blue Wrens *Malurus cyaneus* (Rowley 1965a) and White-winged Choughs *Corcorax melanorhamphus* (Rowley 1965b) also suggest that kin selection is necessary to provide a

TABLE I

Comparison of the breeding success of a hypothetical population of Kookaburras composed entirely of pairs with that of a normal population of Kookaburras in which one-third are auxiliaries (data from Parry 1973b).

Numbers of	Normal population			Hypothetical population
	Families			Pairs
	Pairs	Breeding pairs	Auxiliaries	
Adults*	100 (50 prs)	100 (50 prs)	100	300 (150 prs)
Fledgelings per breeding pair	1.2	2.3	0	1.2
Fledgelings raised per population	60	115	0	180
		175		180

\* To facilitate calculation, 300 adult birds are assigned to each population.

complete explanation for the breeding systems of these birds.

In view of the theoretical objections to adaptations by populations, we consider that a reappraisal of the evidence bearing upon the supposed reduced fertility in Kookaburras is necessary. Parry (1973b) suggests that, because one-third of the adult population consists of non-breeding auxiliaries occupying the same amount of space as breeding birds, the auxiliary system has evolved to reduce the reproductive potential of the population. However, the reproductive output of a hypothetical population composed entirely of breeding pairs would not be significantly greater than that of a population with the existing social structure (see Table I), because pairs without auxiliaries are less successful breeders than families. Further, it is known that pairs without auxiliaries are also less capable of raising fledgelings to adulthood, and that birds that breed immediately upon reaching maturity have relatively poor success. If these factors were included in Table I, then the existing population would almost certainly out-reproduce a hypothetical population of breeding pairs.

The reasons for the two-fold difference between the number of fledgelings raised by families and by pairs without auxiliaries are at first unclear, because it is claimed that there are no significant differences in clutch-size, the time for which the nest is left unattended, the amount of food received by nestlings and the growth rate of nestlings. All these factors, which are relevant to the evolution of auxiliary behaviour, have been assembled in Table II. In our view the most important difference between families and pairs without auxiliaries is the number of eggs laid per breeding season. Because parents in families, but not as pairs, may lay a second clutch during a favourable breeding season, the total number of eggs laid per season is a more useful comparison than is average clutch-size. Clearly, these data would indicate that the average annual output of eggs from families is much higher than from pairs.

After making a statistical comparison of the differences in rates of growth of nestlings raised by families, and those raised by pairs, Parry (1973b) stated that they are not significantly different. Though the differences are not enough to exclude chance as an explanation, nestlings of families always

TABLE II

Comparison of factors affecting fitness of families and single breeding pairs (data from Parry 1973b).

	Av. clutch-size	Av. no. of eggs per breeding season	% of time nest left unattended	No. of feeding visits per 30 minutes	Growth rate of nestlings*			
					1965 1 Aux.	1965 2 Aux.	1966 1 Aux.	1966 3,4 Aux.
Families	3.0	>3.0	23	1.5 ± 0.13 (n = 35)	A	B	C	D
Pairs	2.5	2.5	28	1.7 ± 0.38 (n = 11)	0.91A	0.98B	0.97C	0.88D

\* Only relative growth rates are supplied; so the actual growth rates are replaced here by the constants A, B, C and D.

grew faster than did those of pairs (Table II). These differences may not be significant in the accepted statistical sense, but we regard them as sufficiently relevant to deny any assertion that the growth rates are the same.

Although the number of feeding visits per unit time is approximately the same in both families and pairs, there are insufficient data to determine whether the sizes of the items of food brought to the nest differ, and, hence, if different amounts of food are delivered.

The amount of time the nest is left unattended is similar for both families and pairs, but there is a suggestion that the unattended young of pairs are exposed to a higher risk of predation after fledging (Parry 1973b).

In summary, the two-fold increase in the number of fledgelings raised by families compared with pairs is consistent with the other data presented. However, the period of auxiliary life warrants further discussion. Parry's (1973b) study showed that vacancies created by the death of breeding adults are promptly filled by auxiliary birds, often from nearby territories. This suggests that the high number of auxiliaries sometimes present in families is caused by a shortage of suitable breeding territories. Presumably this shortage is also the reason why some auxiliaries assist their parents for several years, although only three cases of mature auxiliaries assisting for more than one year are documented (Parry 1973b). The recorded instance of a female auxiliary assisting for four years seems rather unimportant at this stage; this bird was observed to form a pair-bond unsuccessfully, and therefore its behaviour may well have been aberrant.

In conclusion, we consider that there is no evidence of reduced fertility in Kookaburras, and that the auxiliary social system can be adequately explained in terms of individual fitness and kin selection

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23 November 1973.

### BREEDING OF LITTLE PENGUINS ALONG THE GREAT AUSTRALIAN BIGHT

From 20 October to 2 November 1973, a search for breeding Little Penguins *Eudyptula minor* was made along the western cliffs of the Great Australian Bight, by a party detailed in the acknowledgements. These cliffs, 75 to 90 m high, form the southern margin of the Eucla Basin, commonly known as the Nullarbor Limestone area. A less detailed search of the eastern cliffs was also made. Because accurate maps of the Western Australian area are not available, all distances and locations must be taken as approximate.

The inland cliffs meet the sea at Twilight Cove,

rather than theoretically unlikely adaptations by populations.

We are indebted to Drs M. J. Littlejohn and A. A. Martin and Messrs G. F. Watson, D. F. Gartside and K. G. Hill for invaluable discussion and criticism.

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32°16'S, 126°02'E, and extend 158 kilometres west, where they leave the sea. Lowry (1970, *Bull. geol. Surv. WA* 122: 23) refers to them as the Baxter cliffs. There has been no previous ornithological exploration of the cliffs but there were several reasons for believing that they might be used by Little Penguins.

First, Little Penguins were occasionally seen, dead or alive, along the beach near Eucla near the border of Western and South Australia, half way between the nearest recorded breeding grounds in the Recherche Archipelago in Western Australia

and in the Nuyts Archipelago in South Australia. Unless the birds could land and rest safely (beaches and dunes do not offer adequate refuge), this stretch through the swells and storms of the Bight would probably be beyond their capacity. That they are capable of covering long distances with frequent resting places *en route* has been shown by nestlings banded by members of the Victorian Ornithological Research Group penguin study on Phillip Island, Victoria. One of these banded nestlings was recovered at Point Turton in South Australia, a distance of about 950 kilometres by sea.

Secondly, Little Penguins breed at the foot of high cliffs near Port Campbell in western Victoria, although generally islands are chosen as breeding sites.

Thirdly, Mr A. J. Carlisle, a resident of the Nullarbor area, claimed that he had seen penguins in twelve different places. These were shown to him by the now-extinct aborigines, who ate the birds and eggs. He was, therefore, engaged as guide and provided the transport.

On 22 October, we found the first colony about four kilometres west of Twilight Cove, near a group of Sea Lions *Neophoca cinerea*, five of them suckling young. We estimated 100+ nests in rockfalls under a deep overhang and also in holes in the cliff. Most holes and crevices were too deep for us to extract the birds. Some appeared to be brooding eggs, one had a nestling a few days old, and two unguarded chicks were in another nest.

Next we searched near Toolina Cove, 32°44'S, 125°01'E, and on 25 October found a second colony three and a half kilometres south-west where there is a fissure in the clifftop. Nests were under rockfalls piled high against the cliff and there was some vegetation. Rocks were unstable and shifted alarmingly when stepped on. Again, most nests were inaccessible; we estimated a maximum of 200, and banded four nestlings nearing fledging, also finding one hatching egg and one newly hatched chick.

On 26 October, we found a third colony at Toolina Cove in a similar place to that of the second one and of about the same size. There we also banded four large nestlings and could reach two others, large and downy but below size for banding.

We measured and weighed all birds that we could reach. The results were consistent with those of birds handled in museums and on Phillip Island, weights of the young birds being similar to the heavier weights recorded there.

From the clifftop, we saw that birds when landing were battered against the rocks and sucked out by receding waves, but there were no signs of damage on those examined. They were seen swimming over a pair of large sharks close inshore but

sharks and birds showed no awareness of each other.

We reached all three colonies by abseiling or roping down the cliffs, and returned from the two colonies at Toolina by climbing, but at Twilight Cove we walked back along the base of the cliffs, possible only during low tide, after wading through deep fast-flowing water-filled gutters.

The western end of the cliffs is at 32°55'S, 124°32'E. Six kilometres east on 29 October, we saw two more colonies from the clifftop. At one, we saw three penguins swimming in to land and, at the other, ground outside crevices was whitewashed indicating that young were or had been inside. At low tide, it was possible to walk for about four kilometres at the foot of the cliffs, but access to these colonies was barred by deep gutters. These would also exclude cats, dingoes and foxes, of which there was evidence. Other suitable but accessible rockfalls were not used by penguins possibly because predators could reach them by land.

Because of the rugged terrain, it was difficult to reach the clifftop on foot or by four-wheel-drive vehicles and the east-west track was often many kilometres inland. Where we reached the cliffs, there were always rockfalls and these appeared to offer suitable nesting sites for penguins over the entire length.

We also looked briefly for a larger penguin seen at the western end of the cliffs by Mr Carlisle on about six of the twenty visits that he has made there over many years. The aborigines had told him this penguin bred east of the Booribabinya Rock near the site of the last two colonies of Little Penguins that we noted from the clifftop. They described the egg as much larger than that of the Little Penguin. A photograph taken by Mr Carlisle a few years ago showed a bird resembling a species of *Eudyptes*. There were no signs from the clifftop of such a penguin but we had time only for a most cursory search over a small area.

We found dried bones and feathers of a headless penguin, later identified by Dr G. F. van Tets as a Fiordland Crested Penguin *Eudyptes pachyrhynchus*. The western end of the cliffs may possibly be a preferred resting place for this species of *Eudyptes* where shore and cliffs offer suitable conditions.

Near the border of Western and South Australia stands Wilson's Bluff and for most of the twenty-seven kilometres to the east calcarenite forms a cliff about 30 m high, bordered by a narrow beach. Thence, the cliffs again come right to the water's edge for 180 kilometres from a stack known as The Reaper at 31°28'S, 131°08'E. We viewed these cliffs from a number of places. The habitat provided by rockfalls, particularly at the western end, was similar to that along the Western Australian cliffs, and may also be used by penguins. These

rockfalls could be reached only by rope from the cliff-top. Probably by watching towards evening, one could prove whether or not penguins use them.

This expedition was made possible by grants from CSIRO Science and Industry Endowment Fund, Shell Company of Australia and Ansett-Pioneer. Without the help of three members of the Special Air Service Regiment with rock-climbing equipment, much less would have been achieved. The help

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27 December 1973.

#### FURTHER OBSERVATIONS ON *PAROTIA WAHNESEI* AND *P. LAWESII* (PARADISAEIDAE)

Since the publication of the paper on the genus *Parotia* (Schodde and McKean 1973), we have gathered further information on *Parotia wahnesi* in the Rawlinson Range and on *P. lawesii* in the Herzog Range in north-eastern Papua New Guinea.

In their treatment of *P. wahnesi*, Schodde and McKean assumed that the simple supra-narial tufts in adult males were not erectile. Examination of four fresh males with adult plumage on the crown has shown that the tufts are mobile and capable of limited forward and backward movement. Their function in display is probably much the same as that of the forehead crest in *P. sefilata* from the Vogelkop region, in which movements of forehead feathering are probably simple compared with those of the more complexly crested *P. lawesii* and *P. carolae* of the central New Guinean cordillera. (See Frith (1968) for description of those of *P. carolae*.)

We found the hitherto unrecorded bower-system of *Parotia wahnesi* near Mindik village in the Rawlinson Range on 10 November 1973. Comprising two bowers about five metres apart, it was on a broadly rounded ridge at 1,590 m altitude, in rather thick shrubbery under a small opening in the canopy of mixed primary montane forest dominated by trees of *Nothofagus*, *Dryadodaphne*, *Lithocarpus* and *Podocarpus*. Both bowers were flat or slightly depressed arenas scrupulously cleared of debris so as to expose the first layer of fine interwoven forest rootlets that form the floor of the arenas. (The wet burlap-like floor of the bower of *Parotia carolae* (Gilliard 1969: 178) may well be of the same structure.) One arena was circular and 1.5 m in diameter, the other (Plate 6) oblong and 1.5 x 1 m. Both had several well-spaced small erect saplings from which most leaves had been cleared. A thicker well-worn branch, along which the birds approached, ran down over each arena. At least one coloured male and one uncoloured male were in attendance. Another bower-system on a nearby hill (not seen) was said by local people to be occupied by two or three coloured males. The similarity be-

of all members of the party is acknowledged: Dr G. W. Johnstone, Mrs K. A. Johnstone, Mr J. P. Stewart and Miss J. R. Blinzler from Melbourne, Mr M. G. Brooker from Perth who assisted with preliminary arrangements and Mr H. W. Wheeler from Adelaide who supplied geographical and geological information. A separate paper dealing with the avifauna of the region is in preparation.

tween this species and the rather distantly related *P. lawesii* (Schodde and McKean 1973) in behaviour and attendance at the bower and in structure of the arenas suggests that double bowers and multiple attendance at them may be normal in the genus *Parotia* (cf. Gilliard 1969 for the bowers and behaviour of *P. sefilata* and *P. carolae*).

The iris in *P. wahnesi*, the colour of which has not been previously reported to our knowledge, has two coloured rings. The inner ring is deep cobalt-blue in adults and subadults of both sexes, and the outer is usually pale greenish cream in adult and subadult males (five specimens examined) and pale creamy blue in adult and subadult females (two specimens examined). This pattern is much the same as in the closely related species, *P. helenae*, of the eastern Owen Stanley Range, and *P. sefilata*. The apparent sexual dimorphism in tone of outer ring appears to be paralleled in *sefilata* (see Gyldenstolpe 1955; Gilliard 1969).

We also found that the irides in both males and females of *P. lawesii* collected in the Herzog Range were similarly bi-coloured, with deep cobalt-blue inner rings and yellowish cream outer rings in both sexes. By contrast, populations of *P. lawesii* on the southern scarp of the central New Guinean cordillera have prevalently uniformly cobalt-blue irides without distinctively coloured outer rings. Such differences in the colour of the iris have been discussed already by Schodde and McKean. Whether the bi-coloured iris in the isolated population in the Herzog Range has resulted from rare local introgression between *P. lawesii* and *P. helenae* where they meet on the northern scarp of the central cordillera in the region of the Bowutu Mountains is not known. The iris was consistently bi-coloured and the supra-narial region uniformly typical of *P. lawesii* in all six specimens that we took, suggesting, by the absence of segregation, that there is no recent evidence of introgression.

Although they had no material, Schodde and McKean presumed that the characters of a darker

PLATE 6



Plate 6. Oblong area, part of bower system of *Parotia wahnesi*.



head and duller back of the female were not enough to separate the population of *P. lawesii* in the Herzog Range as a distinct race, *fuscior* (Greenway 1934; Gilliard 1969). Three females that we took at Wagau in the Herzog Range are identical in colour of the head and back with a recently collected topotypical series of females of the nominate race from Efogi, cited by Schodde and McKean, and so confirm their assumption. Ventrally, the females from Wagau approach those of the western populations of *P. lawesii* in their rather pale-buff colour, yet nevertheless match occasional paler females from the southern Owen Stanley Range. As such, they are obviously part of the east-west cline in ventral colour described by Schodde and McKean and

emphasize the undesirability of separating eastern and western races in *P. lawesii*.

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16 February 1974.

#### FURTHER INFORMATION ON THE BIRDS OF PAPUA NEW GUINEA

The known western limit of many south-eastern New Guinean birds is given in Rand and Gilliard (1967) as Hall Sound or Angabunga River. Because similar country extends westward it is not surprising if these species also extend westward. Savanna continues on the coastal hills in an almost unbroken range to the Lakekamu River. I visited the northern and western parts of the Mekeo Plain from 27 August to 2 September 1973 and extended the known range of five species by about thirty kilometres. The area north and west of Bereina (Fig. 1), the Sub-district headquarters, is not known at all well ornithologically. The area of Hall Sound was well worked by Zimmer in 1920-21, Hamlin in 1928-29 and the Archbold Expedition in 1933-24.

##### HETEROSCELUS BREVIPES Grey-tailed Tattler

Mackay (1970) stated that sight-records of *Heteroscelus* spp have been made along the coast but doubt remains about the species. Mayr and Rand (1937) point out that Zimmer collected a male at Hisiu and a female at Port Moresby during 1920-21. On 8 September 1973, five were on the sand and mud-flats near the mouth of the Angabunga River. They were still there in mid-October. Call notes, 'ter-wee, ter-wee', given in flight were similar to those mentioned by Condon and McGill (1965). The call of *incanus* is quite different.

##### GALLINAGO HARDWICKII Japanese Snipe

Recorded near Port Moresby by Mackay (1970). Between 21 March and 7 April 1973, up to sixteen birds in loose flocks observed near Bereina.

##### LIMICOLA FALCINELLUS Broad-billed Sandpiper

Second record for Papua New Guinea. Recorded without data by Rand and Gilliard (1967). Hoogerwerf (1964) observed it once at Merauke in Irian Jaya. Seen on several occasions at Aviara mud-flats during October 1973. The distinctive head-pattern and the decurved tip to the bill were clearly seen.

##### PTILINOPUS IOZONUS Orange-bellied Fruit-dove

On 5 May 1973 I found a nest in a small tree at a height of 3 m at Kubuna Mission, thirty kilometres east of Bereina. The nest was small, almost flat, composed of twigs on a horizontal fork. The single white egg was visible from the ground.

##### MICROPSITTA PUSIO Buff-faced Pygmy Parrot

The nominate race ranges from Milne Bay to the Angabunga River according to Rand and Gilliard (1967). I saw two in rainforest close to Ameiaka.

##### LALAGE SUEURII White-winged Triller

Rand and Gilliard (1967) and Mackay (1970) recorded this species only from Port Moresby and Bartle Bay. Zimmer's specimen from Lolorua near Galley Reach recorded by Mayr and Rand (1937) was apparently overlooked. I have recorded it on many occasions during January, February, March, June, August, September and October near Bereina. I found a nest, 3 m high, in a small tree on 12 October 1973. It contained two well-fledged young. This extends the known range from Galley Reach by about sixty kilometres and from Port Moresby by about 100 kilometres.

##### CORACINA CAERULEOGRISEA Stout-billed Greybird

*Adamsoni* has been recorded as far west as Hall Sound (Rand and Gilliard 1967). On 30 June 1973, four were seen in tall canoe trees at Papogogo.

##### CORACINA PAPUENSIS Papuan Greybird

Rand and Gilliard (1967) gave Hall Sound as the western limit for *angustifrons* in south-eastern New Guinea. I found it common in the Bereina district during 1973. Between 27 August and 2 September, I saw it often at Ameiaka, Piunga and Apinaipi. This extends the known range westward by thirty kilometres.

##### MOTACILLA FLAVA Yellow Wagtail

Bell (1969) first recorded this species in the Ok Tedi area. I observed one on three occasions on ploughed land near Bereina. The dates were: 23 February, 14 March and 5 April 1973. Some of this area was flooded at this time. The olive-green back and yellow underparts were unmistakable. Second record for Papua New Guinea.



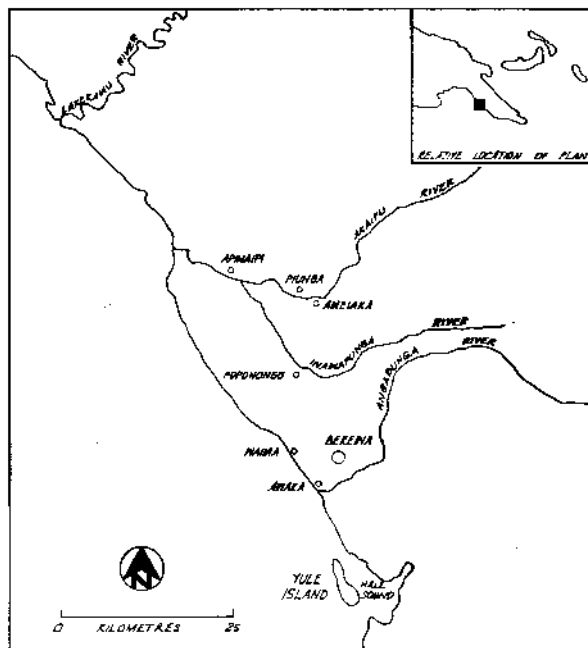


Figure 1. Sketch-map of Bereina area, PNG.

**GERYGONE OLIVACEA** White-throated Warbler

A savanna species recorded from Port Moresby to the Aroa River. Common in coastal savanna from Bereina to at least Apinaipi. Probably extends west to the Lakekamu River.

**RHIPIDURA RUFIFRONS** Black-breasted Rufous Fantail

Races have been recorded in the Louisiade Archipelago (Bell 1970) and in the Fly River District. On 15 September 1973 I was surprised to see one in mangroves about three kilometres west of Bereina. Two were there on 6 October and another on 13 October. On the three occasions it did not mix with *Rhipidura fuliginosa*, a common mangrove dweller in this area.

**ARSES TELESCOPHTHALMUS** Frilled Flycatcher

Rand and Gilliard (1967) gave Hall Sound as the western limit for *henkei*. Fairly common in gallery forest and secondary growth near Bereina but plentiful in rainforest at Ameiaka. A pair was found nesting at Apinaipi, on 2 September 1973.

**MICROECA FLAVIGASTER** Lemon-bellied Flycatcher

Previously recorded as far west as Yule Island. It is plentiful in the savanna-covered coastal hills between Bereina and Apinaipi. Probably extends west to the Lakekamu River.

**SPHECOTHERES VIELLOTI** Green Figbird

Mackay (1970) reported it as common at Port

Moresby in the area of the town and in savanna. Bell (1967) recorded five at Bamu Base Camp in the Balimo area of the Western District. Quite common near Bereina in grassland, particularly at the De La Salle High School. Usually in pairs between September and February; flocks (5-22) from April to August mainly between 16:00 and 17:00 before roosting. Largest flock (40) in savanna on 23 April. Not seen at Apinaipi in September 1973; so, it possibly has not reached this area. Unconfirmed reports of this species at Orokoloko near Kerema need substantiation.

**LICHMERA ALBOAURICULARIS** White-eared Honeyeater

Mayr and Rand (1937) recorded this species at Baroka near Hall Sound. I have seen it north to the Inawafunga River and west to Waima. It favours cane-grass with scattered trees and shrubs as well as coconut plantations. It is also common near habitations and is the most common honeyeater in the grounds of De La Salle High School. The nest is a substantial, fairly neat, cup-shaped structure composed of dry grass, leaves and plant fibres matted together with cobwebs. It is lined with soft plant down and suspended by its rim to the outer leaves of a tree, shrub or herb between one and five metres above the ground. Bell (1970) saw one bird carrying nesting material into cane-grass and stated that this was the only known nesting site. Two pinkish white eggs are freckled with light brown only at the larger end. Size: 18 x 13.5 mm.

**MELIPHAGA GRACILIS** Slender-billed Meliphaga

Rand and Gilliard (1967) recorded *cinerifrons* as far west as Hall Sound. On 1 September 1973, I examined an injured bird at Apinaipi. The rump was soft and fluffy, grey in colour tipped greenish, thus separating it from similar species (*R. Mackay in litt.*) This extends the known range westward by about thirty kilometres.

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7 January 1974.